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'Report on recent progress in the theory of linear groups,' L. E. Dickson, University of California, Berkeley, Cal.

'Recent advances in the application of mathematics to physical problems,' A. S. Hathaway, Rose Polytechnic Institute, Terre Haute, Ind.

'Recent progress in theoretical meteorology,' Cleveland Abbe, Weather Bureau, Washington, D. C.

'Recent progress in positional astronomy,' J. R. Eastman, Andover, N. H.

'Practical astronomy during the first half of the present century,' T. H. Safford, Williamstown, Mass.

'Internal forces that generate stellar atmospheres,' J. Woodbridge Davis, New York City.

'The determination of the nature of electricity and magnetism, including a determination of the density of the ether,' R. A. Fessenden, Western University, Allegheny, Pa.

'Ancient eclipses and chronology,' R. W. McFarland, Oxford, Ohio.

'Some points in the design of a spectroscope,' H. C. Lord, Ohio State University, Columbus.

'The relation between point and vector analysis,' J. V. Collins, Stevens Point, Wis.

'William Hamilton, Hermann Grassmann und deren Widersacher,' Ferdinand Kraft, Zurich.

'The theory of mathematical inference,' G. J. Stokes, Queen's College, Cork, Ireland.

'The magnetic work of the Coast and Geodetic Survey,' L. A. Bauer, Coast and Geodetic Survey, Washington, D. C.

SECTION G, BOTANY.

Vice-Presidential Address, Charles R. Barnes.

'Division of the megaspore of *Erythronium*,' John H. Schaffner.

'The embryo-sac of *Leucocrinum montanum*,' Francis Ramaley.

'The occurrence of Lignum and Calcium Oxalate during differentiation of the buds of *Prunus americana*,' H. C. Bolley.

'The flora of Franklin County, Ohio,' A. D. Selby.

'Studies of the vegetation of the high plains of western Nebraska,' C. E. Bessey.

'The geotropism of the Hypocotyl of *Cucurbita*,' Edwin Bingham Copeland.

'Notos on the long-leaved (*Longifoliae*) Willows,' W. W. Rowlee.

Sullivant Day—Papers on bryological subjects, especially relating to the work of Sullivant and the progress in bryology since his time. Exhibition of his type specimens, collections, publications, portraits and other mementos.

'On the occurrence of the black rot of cabbage in Europe,' H. A. Harding.

'Duration of bacterial existence under trial environments,' H. C. Bolley.

'Cultures of *Uredineae* in 1899,' J. C. Arthur.

'Field experiments with 'Nitragin' and other germ fertilizers,' Byron D. Halsted.

'Some notes on subterranean organs,' A. S. Hitchcock.

'The Tamarack Swamps in Ohio,' A. D. Selby.

'Some monstrosities in spikelets of *Eragrostis* and *Setaria* with their meaning,' W. J. Beal.

'Botanical Teaching in the Secondary Schools,' W. C. Stevens, Ida Clendenin.

'Suggestions looking toward a more rational basis for the classification of the *Pleurocarpus* Mosses,' A. J. Grout.

'Basis for generic and specific characters in the *Uredineae*,' J. C. Arthur.

'Two diseases of *Juniperus* caused by *Trametes pini* and *Polyporus carneus*,' Herman Von Schrenk.

'The effect of hydrocyanic acid gas upon the germination of seeds,' C. O. Townsend.

'Physiological effect of hydrocyanic acid gas upon young fruit trees,' W. G. Johnson.

'Are the trees advancing or retreating upon the Nebraska plains?' C. E. Bessey.

'Etiolative Reactions,' Wm. B. Stuart.

'The Mycorrhiza of *Tipularia*,' Julia B. Clifford.

'Cytological studies in the *Hepaticae*,' Bradley M. Davis.

'A thousand miles for a fern,' C. E. Bessey.

'The distribution of lichens in the Mississippi Valley,' B. E. Fink.

DISCUSSION AND CORRESPONDENCE.

THE FOEHN WINDS OF SWITZERLAND.

MR. WARD's review, in *SCIENCE* of July 21st, of Billwiller's classification of the *Foehn* winds

is very interesting and instructive. Attention should, however, be called to the fact that the correct name is not *Foehm* (*Föhm*), as it there appears, but *Foehn* (*Föhn*), or *Foen* (*Fön*), the form with *h* being preferred. *Foehn* is derived probably from the Italian *favonio*, which in turn is from the Latin *favonius*, the name of a gentle west wind. Hence the Italian west wind becomes a Swiss south wind. In Latin and Italian the word is masculine; in German it is usually treated as masculine, but Grimm quotes an interesting passage from an old gloss in which it is used as feminine. The character of this wind is as uncertain as the gender, the etymological meaning being 'the favoring one,' but the following extracts translated from Schiller's *William Tell* show how the Swiss on Lake Lucerne dread the *Foehn*, 'the mighty spirit,' as it has been called. Ruodi, the fisherman, exclaims: "The *Foehn* has broken loose; you see how wild the lake is. I cannot steer against storm and waves." Baumgarten answers: "God help you! How I pity you!" In another place Tell says: "When the *Foehn* sweeps down from its ravines, the people put out their fires, and the boats hastily seek the harbor." Extinguishing the fires is still a custom, even a law in some parts of Switzerland—in Uri, for instance, which is especially exposed to the violence of the *Foehn*.

CHARLES BUNDY WILSON.

THE UNIVERSITY OF IOWA,
DEPARTMENT OF GERMAN.

THE OPENING OF THE MOUTH AS EXPRESSION.

TO THE EDITOR OF SCIENCE: Charles Darwin ascribed the open mouth in surprise and astonishment to several causes, viz., for quietness and effectiveness of breathing, and by mere relaxation of muscles. It occurs to me that a deeper organic reason may have its force, namely, that the open mouth is attention sign, and is a primitive and constant reaction with the young of many animals for the reception of food—for example, with birds. Any sound or other stimulus immediately causes the young bird to extend its mouth. I have some evidence that with very young infants every stimulus of sound or sight causes opening of the mouth, often in sucking form, and the smile of the in-

fant when the finger is pointed at it may be either nascent or degraded sucking. The common and highly useful tendency of the very young to open the mouth to all stimuli, visual, aural, etc., continues as a survival in after life, being especially brought out with stimuli of high intensity and unusual quality, and thus becomes a mark of surprise and astonishment. It is also noteworthy that with many young boys and girls there is a tendency to open the mouth under any attention. The rise of smiling and laughter as connected with wit and humor—at the basis of which lies surprise—is thus evident as a kind of attention expression. Certainly the primary expression of the mouth is a feeding expression, and that this has been modified and evolved in connection with a variety of attention phenomena seems probable, and it would be worth while to make a very detailed study of expression in infants and young animals with this point in view.

HIRAM M. STANLEY.

LAKE FOREST, ILL., August 8, 1899.

ASTRONOMICAL NOTES.

OBSERVATORY OF YALE UNIVERSITY.

THE annual report of this observatory states that the heliometer has been used for making the final measures of the parallax series of stars having large proper motion. The study of the refraction of highly colored red stars has been continued. The photographic observations of the meteors in November, 1898, gave sixteen trails, eight of which were of Leonids. Four of these were in plates at both of the stations occupied. Dr. Elkin has published in the *Astrophysical Journal* a careful discussion of the position of the radiant obtained from the trails.

FLOWER OBSERVATORY OF THE UNIVERSITY OF PENNSYLVANIA.

VOL. I., Part II., of the publications of this observatory contains the discussion of the zenith telescope observations—October 1, 1896–August 16, 1898. The plan of this work for investigating the variation of latitude is that proposed by Küstner in 1890 and has been most zealously and carefully carried out by Professor Doolittle. The groups of stars, each of which is included in about two hours of right ascen-